

# INVESTIGATOR'S ANNUAL REPORT

## National Park Service

All or some of the information provided may be available to the public

<b>Reporting Year:</b> 2005	<b>Park:</b> Shenandoah NP						
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<b>Name:</b> James Lawrey	<b>Phone:</b> 703-993-1059	<b>Email:</b> jlawrey@gmu.edu					
<b>Permit#:</b> SHEN-2005-SCI-0011							
<b>Park-assigned Study Id. #:</b> SHEN-00317							
<b>Project Title:</b> Lichen Collection and Identification for Rock Outcrop Management Project							
<b>Permit Start Date:</b> Sep 26, 2005	<b>Permit Expiration Date</b> Nov 30, 2006						
<b>Study Start Date:</b> Sep 26, 2005	<b>Study End Date</b> Nov 30, 2006						
<b>Study Status:</b> Continuing							
<b>Activity Type:</b> Inventory							
<b>Subject/Discipline:</b> Inventory Natural Resources							
<b>Objectives:</b> <p>The purpose of this project is to assist scientists involved in the NRPP funded Rock Outcrop Management Project with the collection and identification of lichens. Lichens are a very poorly studied component of rock outcrop plant communities in SHEN. The formulation of community classifications, and site protection strategies for the Rock Outcrop Management Project requires a greater understanding of lichen diversity, habitat requirements, and rarity.</p> <p>Scientists from the NPS, Virginia DCR, and George Mason University, will work together with Ms. Ihrman to collect, sort, and identify lichens within a subset of the 50 study sites of the Rock Outcrop Management Project. Work will also be done to select and organize difficult to identify specimens for shipment to a professional lichen taxonomist.</p>							
<b>Findings and Status:</b> <p>My study began with the Rock Outcrop Management Project (ROMP) sponsored blitzes [lichen collecting by a group of scientist], that were conducted at Hawksbill talus slope, Crescent Ridge, and Black Rock, south district in the Fall of 2005.</p> <p>The lichens from these blitz collections were taken to the SHEN Natural Resources building where they were separated in to species, and identifications were made when possible with the assistance of Jim Lawrey from George Mason University. Identification numbers were given to each specimen, labels were created, and the specimens were pressed. After pressing (if necessary), the unidentified specimens were packaged in acid-free packets and made ready to be mailed to lichenologists in New York (Richard Harris, NYBG) and Ohio (Don Fleniken) for identification and verification of names. These lichens will be the nucleus for the Shenandoah National Park lichen collection.</p>							

My plans are to continue collecting lichens from the 21 listed R.O.M.P. sites in 2006. All specimens will be identified and prepared for the SHEN herbarium.

I am also conducting a detailed study of the lichen habitats at other areas in the Park including non-ROMP cliffs and rock outcroppings along the road, stone walls along the road, and some of the meadows below the overlook walls.

To fully understand lichen and their protection, one needs to understand the habitat where they can grow and reproduce. I believe this to be very important. To my knowledge only one other herbarium in the United States has this information included in their herbarium.

To accomplish this study I spend several days a week in the Shen collecting and researching sites. The rest is spent at home identifying and preparing the lichens for storage in the Shen herbarium. I have converted a large room in our home with many tables, shelves. I use a 7.5x-70x stereo microscope plus a binocular scope with magnification of 40 to 1600 Å that will take slides for the identification of seeds and spores. I also research on the internet reaching other National Parks, Universities where lichen research is being done, and contacting other lichenologist for helpful information. I have also collected the necessary books for the study of lichen and their substrates.

The initial study of the lichens of the 105 miles of the Shenandoah National Park will take at least ten more years to thoroughly understand the tremendous diversity of the lichens that grow in the Park; including their habitats from the lower to the higher elevations, and their substrates [the surface that they grow on] including trees, rock outcroppings to small pebbles, stone walls, cliff ledges and meadows. Obtaining a full understanding of the Shen lichen and their habitats will help immensely in the protection of their status in the park.

Besides the 400 lichen specimens collected on the ROMP blitzes, I have collected about 250 more lichens. 143 have been identified and of these many are new to SHEN, at least four are new to the State of Virginia, and one has not been seen east of the Mississippi River. I fully believe that in the next two years that this number will increase.

**For this study, were one or more specimens collected and removed from the park but not destroyed during analyses?**

No

**Funding provided this reporting year by NPS:**

0

**Funding provided this reporting year by other sources:**

1000

**Fill out the following ONLY IF the National Park Service supported this project in this reporting year by providing money to a university or college**

**Full name of college or university:**

n/a

**Annual funding provided by NPS to university or college this reporting year:**

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